Draw an Explosion Burst: Radiating Shock Lines and Debris

Original tasks 1, 2 / complete keys

Task 1

Draw a burst with 6 spikes and 8 shock lines on a 10 cm by 10 cm area. Use the convention that shock lines point away from the center. Place debris in two zones: inner and outer. State your center location and spike lengths.

Answer: Center at 5 cm from each edge. Spikes alternate 2 cm and 1 cm. Eight shock lines start just outside the outline and point outward; inner lines about 1.5 cm, outer about 0.8 cm. Inner zone within 3 cm has 8 large debris marks; outer zone beyond 3 cm has 4 small marks.

Reason: A smaller area needs shorter spikes and lines to stay on the page. Two zones still show decreasing density. The center and lengths are checkable against the paper size.

Check: Measure from the center to each spike tip; confirm alternating lengths. Count shock lines and confirm each points away from the center. Count debris marks per zone and confirm inner count is greater than outer.

Task 2

Draw a burst with 10 spikes and 12 shock lines. Use dashed shock lines that become sparser outward. Place debris in three zones. Describe how you vary dash spacing and debris size.

Answer: Center marked. Ten spikes alternate 3 cm and 1.5 cm. Twelve dashed shock lines: inner dashes 5 mm long with 2 mm gaps; outer dashes 3 mm long with 4 mm gaps. Debris: 14 large marks inner, 9 medium middle, 5 small outer.

Reason: Dash spacing and debris size both decrease outward, reinforcing the fading-energy convention. The counts are simple to verify.

Check: Check that dash gaps increase outward and debris counts decrease outward. Confirm all dashed lines align with rays from the center.

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Original tasks 3, 4 / complete keys

Task 3

Draw a burst where the longest spike is 4 cm and the shortest is 2 cm. Use 9 shock lines. Place debris so that no mark touches a shock line. Explain your placement rule.

Answer: Center marked. Nine spikes alternate 4 cm and 2 cm. Nine shock lines radiate outward. Debris placed midway between adjacent shock lines in three zones: 10 inner, 6 middle, 3 outer. No debris mark overlaps a shock line.

Reason: Placing debris between shock lines keeps both structures visible. Alternating spike lengths create an energetic outline. Counts decrease outward.

Check: Inspect each debris mark for contact with a shock line. Count shock lines and debris per zone. Measure longest and shortest spikes from the center.

Task 4

Draw a burst with 7 spikes and 10 shock lines. Use a convention where shock lines are solid near the burst and become dashed farther out. Place debris in three zones and state the counts. Then list two valid alternative choices you could have made.

Answer: Center marked. Seven spikes alternate 2.5 cm and 1.2 cm. Ten shock lines: solid for the first 1 cm from the outline, dashed beyond. Debris: 12 inner, 7 middle, 3 outer. Alternatives: use 8 spikes instead of 7; use dots instead of short dashes for debris.

Reason: Changing line style with distance supports the fading convention. Stating alternatives shows the rubric accepts variation while keeping the radiating structure.

Check: Confirm solid-to-dashed transition occurs at a consistent distance. Count debris per zone and confirm decreasing pattern. Verify alternatives do not break the outward-radiating rule.

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Source rubric / reflection

- [ ] Burst outline is closed and centered on a marked center point.
- [ ] Shock lines radiate outward from the center and do not point inward.
- [ ] Shock line length or dash density decreases with distance from the center.
- [ ] Debris is placed in three zones with larger and denser marks near the burst and smaller, sparser marks outward.
- [ ] Debris does not obscure the shock lines or the burst outline.
- [ ] Alternative spike counts, line styles, and debris shapes are acceptable if the radiating structure and decreasing density remain clear.

Reflection: What did you check, what did you change, and what will you try next?